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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/647,722	08/25/2003	Jiebo Luo	85453DMW	2165

7590 03/06/2007
Thomas H. Close
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Rochester, NY 14650-2201

EXAMINER

DESIRE, GREGORY M

ART UNIT	PAPER NUMBER
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2624

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/06/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/647,722	LUO ET AL.	
	Examiner	Art Unit	
	Gregory M. Desire	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 8/25/03.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,5,8-10 and 17-19 is/are rejected.
- 7) ☒ Claim(s) 3,6,7 and 11-16 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>8/25/03 & 2/20/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-2, 4-5, 8-9, and 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Poggio et al (6,421,463).

Regarding claim 1,

(a) Providing an image (note fig. 1, block 14);

(b) Systematically preprocessing the image (note fig. 1, block 12) and

(c) Using a classifier (note fig. 1, block 16) and the preprocessed image (note output of fig. 12 enters the classifier) to determine an image classification for the image (note col. 6 lines 45-51, input image and preprocessing determines/provides classification for the image), whereby the preprocessed images provides at least one of an improved classifier and an improved classification result (note col. 9 lines 25-27 and 34-36, classifying technique used is support vector machine (SVM) which performs better and more accurate than typically classifier thus an improved classifier and improved classification result). Poggio does not clearly disclose **recomposing the image to generate an expanded set of images**. Poggio discloses resizing/preprocessing an image to generate an expanded set of images. Examiner cites the specification page5

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lines 20-21, which describes image recomposition as a process that systematically creates altered versions of the same image including spatial composition or color composition. Examiner interprets the Poggio's resizing as a process that creates altered version of the same image including spatial composition. At the time of the invention, it would have been obvious to person of ordinary skill in the art to interpret resizing and image as recomposing the image to generate an expanded set of images in the system of Poggio as evidenced by the specification describing recomposing as a process that creates altered version of the same image. Therefore, it would have been obvious to interpret Poggio in view of the specification to obtain the invention as specified in claim 1.

Regarding method claim 2,

Wherein the image provided in step (a) is an exemplar image (note fig. 1 block 14 and col. 6 line 46-47, examiner interprets the input digital image as example image) and in step (b) the exemplar image is systematically recomposed to generate an expanded set of exemplar images (note fig. 1, block 12, image is recomposed/resized).

Regarding method claim 4,

Wherein the image provided in step (a) is a test image (note fig. 1 block 14 and col. 6 line 46-47, examiner interprets the input digital image as the test image) and in step (b) the test image is systematically recomposed to generate an expanded set of

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test images (note fig. 1, block 12, image is recomposed/resized).

Regarding method claim 5,

Wherein the expanded set of test images are processed by the classifier (note fig. 1, block 16) in step (c) thereby providing an improved image classification result (note col. 9 lines 25-27 and 34-36, classifying technique used is support vector machine (SVM) which performs better and more accurate than typically classifier thus an improved classification result).

Regarding method claims 8 and 9

Wherein step (b) comprises spatially recomposing the image to generate an expanded set of spatially recomposed images (note fig. 1, block 12, examiner interpret resizing as spatial recomposing).

Regarding method claims 17 and 18,

Wherein the image classification is a scene classification and wherein the classifier and the expanded set of images are used in step (c) to determine a scene classification (note col. 7 lines 22-25).

3. Claims 10 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Poggio in view of Rogers.

Regarding claim 10, Poggio does not clearly disclose the image cropping. Rogers discloses image cropping (note fig. 1, block 200, auto cropping). Poggio and Rogers are combinable because they are from the field of processing images. At the time of the invention, it would have been obvious to a person of ordinary skill in the art include cropping in the system of Poggio as evidenced by Rogers. The suggestion/motivation for doing so would have been optimizing overall sensitivity of region of interests (note col. 2 lines 55-60). Therefore, it would have been obvious to combine Poggio with Rogers to obtain the invention as specified in claim 10.

Regarding claim 19, Poggio does not clearly disclose the image is a medical image. Rogers discloses the provided image as a medical image (note fig. 1, block 100, digital mammogram as medical image). Poggio and Rogers are combinable because they are from the field of classifying images. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to input medical images in the system of Poggio as evidenced by Rogers. The suggestion/motivation for doing so would have been detected micro calcification, which can find issues early like breast cancer (note col. 1 line 64-66 and col. 2 lines 17-23). Therefore, it would have been obvious to combine Poggio with Rogers to obtain the invention as specified in claim 19.

Allowable Subject Matter

4. Claims 3, 6-7, 11-13, 14-16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5. The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 3, the distinguishing feature is further describing recomposed exemplar image to be used for training the classifier these features in combination with other features are not taught in the prior art

Regarding claim 6, the distinguishing feature is that system use 2 different types of images, image provided are exemplar image and test image. Claim 7 depends on 6. Therefore are also objected.

Regarding claim 11, Poggio's system discloses spatial recomposing, the distinguishing feature is temporally recomposing, capturing an image in earlier or later time. This feature in combination with other features is not taught in the prior art. Claims 12 and 13 depend on claim 11. Therefore are also objected

Regarding claim 14, the distinguishing feature further describes recomposing to comprise temporally recomposing one or more spatially recomposed image to generate an expanded set of images of capture image at an earlier or later time. These features in combination with other features are not taught in the prior art. Claims 15 and 16 depend on claim 14. Therefore are also objected

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory M. Desire whose telephone number is (571) 272-7449. The examiner can normally be reached on M-F (6:30-3:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eileen Lillis can be reached on (571) 272-6928. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

G.D.
February 28, 2007

GREGORY DESIRE
PRIMARY EXAMINER

